

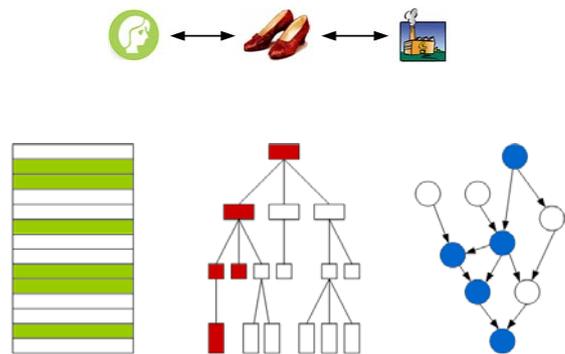
Implementation of interrelated product- and process platforms in a PDM/PLM System

Key Words: Product platform, Process platform, Variant management, Factory as Product

Abstract

The implementation of interrelated product- and process platforms in a PDM/PLM System is in the focus of this thesis. The in this way elaborated database shall then be exploited to derive automatically the product variants and the related production processes. The derivation shall be mastered by defining suitable parameters and its according values related to the customer's point of view which implies a specific product variants. Within this view, Siemens tools will be used.

This thesis will be connected to the EU 7th Framework Research Project DOROTHY, which aims to “design customer driven shoes everywhere, manufacture them intelligently anywhere” as a crucial challenge for shoe industry to gain competitiveness on the global markets.



Environment

For some years now, globalised markets have been demanding that the various sectors can produce customer driven, individualized products in ever shorter cycles. This impacts the development of products in the sense of an increasing amount on variants as well as in decreasing development cycles. The ever more complex product development also highly affects the development of the corresponding production processes and facilities. One approach on that topic offers the paradigm “Factory as Product” by integrating the product into the factory and by taking advantage of the acquisitions of the digital product development. Furthermore, simulation results will support the responsible management to make efficient and effective decisions on the offered product range as well as on the existing or planned product and production structures. Especially at Mass Customization (MC) production, the feed of input data needed by simulation is an asset since high amount and variety of the different product variants and therefore the high complexity at production and needs to be supported.

Work packages

- Get familiar with the topic of the Dorothy project, data synchronisation methods and MC-Production
- Consult relevant literature
- Investigate the possibilities to represent the interrelated product- and process platforms in a PDM/PLM System in order to automatically derive product- and process variants
- Collect the data needed for producing product variants at a MC production
- Define a scenario of synchronized product- and process platforms and implement it in the PDM/PLM
- Derive production orders and further relevant data from the scenario as input to an existing shoe production simulation model
- Documentation
- Final and Mid-term presentation

Information & Administration

Noëlle Jufer, CLA G19.2 – jufer@inspire.ethz.ch

Marcel Schmid, CLA F21.2 – schmid@inspire.ethz.ch

Jens Bathelt, CLA G19.2 – bathelt@inspire.ethz.ch